

WHAT IS CLAIMED IS:

1. A gelatin-based substrate for fabricating protein arrays, the substrate comprising: gelatin and a trifunctional compound A-L-B; wherein A is a functional group capable of interacting with the gelatin; L is a linking group capable of interacting with A and with B; and B is a functional group capable of interacting with a protein capture agent, wherein A may be the same or different from B.
2. The gelatin-based substrate of claim 1 wherein the interaction between the gelatin and A is a physical binding or a chemical reaction.
3. The gelatin-based substrate of claim 1 wherein the interaction between the protein capture agent and B is a physical binding or a chemical reaction.
4. The gelatin-based substrate of claim 1 wherein either A or B, or both, is aldehyde, epoxy, hydrazide, vinyl sulfone, succinimidyl ester, carbodiimide, maleimide, dithio, iodoacetyl, isocyanate, isothiocyanate, or aziridine.
5. The gelatin-based substrate of claim 1 wherein B is an affinity tag capable of interacting non-covalently with a protein capture agent that is to be immobilized onto the substrate.
6. The gelatin-based substrate of claim 1 wherein B is streptavidin, biotin, glutathione-S-transferase, glutathione, or histidine tags.
7. The gelatin-based substrate of claim 1 wherein L is a diradical of such a length that the shortest through-bond path between the ends that connect A to B is not greater than 10 atoms.

8. The substrate of claim 1 wherein the gelatin is alkaline pretreated.
9. The substrate of claim 1 wherein the gelatin is pig gelatin or fish gelatin.
10. The substrate of claim 1 wherein the gelatin coverage is 0.2 to 100 grams per square meter.
11. The substrate of claim 1 wherein the gelatin coverage is 10 to 50 grams.
12. A method of making a gelatin-based substrate for fabricating protein arrays comprising the steps of:
 - providing a support;
 - coating on the support a composition containing gelatin;
 - affixing to a surface of the gelatin a trifunctional compound A-L-B; wherein A is a functional group capable of interacting with the gelatin; L is a linking group capable of interacting with A and with B; and B is a functional group capable of interacting with a protein capture agent;
 wherein A may be the same or different from B.
13. The method of claim 12 wherein the trifunctional compound ALB is affixed while coating the gelatin on the substrate.
14. The method of claim 12 wherein the trifunctional compound ALB is affixed after coating the gelatin on the substrate.
15. The method of claim 12 wherein the protein capture agent is antibody, protein scaffold, peptide, nucleic acid ligand, or a molecular imprinting polymer.

16. A method of making a substrate having a protein capture agent affixed onto a surface comprising the steps of:

- providing a substrate comprising gelatin;
- affixing to a surface of the gelatin a trifunctional compound A-L-

B;

wherein A is a functional group capable of interacting with the gelatin; L is a linking group capable of interacting with A and with B; and B is a functional group capable of interacting with a protein capture agent; and

- bringing said surface of the gelatin in contact with a protein.

17. A substrate comprising gelatin and a plurality of protein capture agents attached to the gelatin by means of a trifunctional compound A-L-

B;

wherein A is a functional group capable of interacting with the gelatin; L is a linking group capable of interacting with A and with B; and B is a functional group attached to the a protein capture agent.

18. The substrate of claim 17 wherein the protein capture agent is an antibody, protein scaffold, peptide, nucleic acid ligand, or a molecular imprinting polymer.